

**What is claimed is:**

1. A heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria spp.*, which comprises an amino acid sequence selected from the group  
5 consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38.

2. A light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria spp.*, which  
10 comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

3. A DNA molecule encoding a heavy chain variable region  
15 of an antibody specific to a surface antigen in sporozoite of *Eimeria spp.*, wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38.

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4. The DNA molecule according to claim 3, wherein the DNA comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23 and SEQ ID NO:37.

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5. A DNA molecule encoding a light chain variable region of an antibody specific to a surface antigen in sporozoite

of *Eimeria* spp., wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

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6. The DNA molecule according to claim 5, wherein the DNA comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, SEQ ID NO:31 and SEQ ID NO:39.

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7. A recombinant scFv antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises:

(a) a heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., comprising an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38; and

(b) a light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., comprising an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

8. The recombinant scFv antibody according to claim 7, wherein the heavy chain variable region comprises the amino acid sequence of SEQ ID NO:18 and the light chain variable region comprises the amino acid sequence of SEQ

ID NO:26.

9. The recombinant scFv antibody according to claim 7,  
wherein the heavy chain variable region comprises the  
5 amino acid sequence of SEQ ID NO:20 and the light chain  
variable region comprises the amino acid sequence of SEQ  
ID NO:28.

10. The recombinant scFv antibody according to claim 7,  
10 wherein the heavy chain variable region comprises the  
amino acid sequence of SEQ ID NO:22 and the light chain  
variable region comprises the amino acid sequence of SEQ  
ID NO:30.

11. The recombinant scFv antibody according to claim 7,  
15 wherein the heavy chain variable region comprises the  
amino acid sequence of SEQ ID NO:24 and the light chain  
variable region comprises the amino acid sequence of SEQ  
ID NO:32.

20 12. The recombinant scFv antibody according to claim 7,  
wherein the heavy chain variable region comprises the  
amino acid sequence of SEQ ID NO:38 and the light chain  
variable region comprises the amino acid sequence of SEQ  
25 ID NO:40.

13. The recombinant scFv antibody according to claim 7,

wherein the scFv antibody further comprises a linker between the heavy chain variable region and the light chain variable region.

5 14. A DNA molecule encoding scFv antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises:

10 (a) a DNA molecule encoding a heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38; and

15 (b) a DNA molecule encoding a light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

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15. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:18 and the DNA molecule  
25 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:26.

16. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:20 and the DNA molecule  
5 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:28.

17. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain  
10 variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:22 and the DNA molecule encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:30.

18. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:24 and the DNA molecule  
15 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:32.  
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19. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino  
25 acid sequence of SEQ ID NO:38 and the DNA molecule encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:40.

20. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding scFv antibody further comprises a DNA molecule encoding linker between  
5 the DNA molecule encoding the heavy chain variable region and the DNA molecule encoding the light chain variable region.

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10 21. The DNA molecule encoding scFv antibody according to any one of claims 14-20, wherein the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:18 comprises DNA molecule of SEQ ID NO:17, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:20  
15 comprises DNA molecule of SEQ ID NO:19, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:22 comprises DNA molecule of SEQ ID NO:21, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ  
20 ID NO:24 comprises DNA molecule of SEQ ID NO:23, and the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:38 comprises DNA molecule of SEQ ID NO:37.

25 22. The DNA molecule encoding scFv antibody according to any one of claims 14-20, wherein the DNA molecule encoding the light chain variable region comprising the amino acid

sequence of SEQ ID NO:26 comprises DNA molecule of SEQ ID  
NO:25, the DNA molecule encoding the light chain variable  
region comprising the amino acid sequence of SEQ ID NO:28  
comprises DNA molecule of SEQ ID NO:27, the DNA molecule  
5 encoding the light chain variable region comprising the  
amino acid sequence of SEQ ID NO:30 comprises DNA molecule  
of SEQ ID NO:29, the DNA molecule encoding the light chain  
variable region comprising the amino acid sequence of SEQ  
ID NO:32 comprises DNA molecule of SEQ ID NO:31, the DNA  
10 molecule encoding the light chain variable region  
comprising the amino acid sequence of SEQ ID NO:40  
comprises DNA molecule of SEQ ID NO:39.